

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

NCS MULTISTAGE INC.,
NCS MULTISTAGE, LLC,

Plaintiffs,

v.

NINE ENERGY SERVICE, INC.,

Defendant.

CIVIL ACTION NO. 6:20-CV-00277-ADA

JURY TRIAL DEMANDED

**DEFENDANT NINE ENERGY SERVICE, INC.'S
RULE 50(B) RENEWED MOTION FOR JUDGMENT AS A MATTER OF LAW**

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Defendant Nine Energy Service, Inc. (“Nine”) hereby submits this renewed motion for judgment as a matter of law under Federal Rule of Civil Procedure 50(b). The motion should be granted “[i]f the facts and inferences point so strongly and overwhelmingly in favor of one party that the Court believes that reasonable men could not arrive at a contrary verdict.” *Allen v. Seacoast Prods., Inc.*, 623 F.2d 355, 359 (5th Cir. 1980), *overruled on other grounds by Gautreaux v. Scurlock Marine, Inc.*, 107 F.3d 331, 332 (5th Cir. 1997). “[T]he court should give credence to the evidence favoring the nonmovant as well as that evidence supporting the moving party that is uncontradicted and unimpeached.” *Evans v. Ford Motor Co.*, 484 F.3d 329, 334 (5th Cir. 2007).

At trial, Nine made oral motions for judgment as a matter of law and filed three motions for partial judgment as a matter of law: Defendant Nine Energy Service, Inc.’s Rule 50(A) Motion for Judgment as a Matter of Law, Dkt 234 (filed Jan. 19, 2022); Defendant Nine Energy Service, Inc.’s Second Rule 50(A) Motion for Judgment as a Matter of Law, Dkt 238 (filed Jan. 20, 2022); and Defendant Nine Energy Service, Inc.’s Third Rule 50(A) Motion for Judgment as a Matter of Law, Dkt 239 (filed Jan. 21, 2022). Nine hereby renews those motions:

I. NCS HAS NOT SHOWN THAT THE ACCUSED BREAKTHRU DEVICES INFRINGE THE ’445 PATENT (DKT. 234 AT 2-4; DKT. 238 AT 8).

A reasonable jury could not return a verdict for NCS on any infringement claim because NCS failed to prove that the BreakThru device includes a rupture disc “directly secured” to any cylindrical surface. The Court should grant judgment as a matter of law that Nine did not infringe U.S. Patent No. 10,465,445 (“the ’445 Patent”). NCS must “prove that the accused product or process contains . . . literally . . . every limitation of the properly construed claim.”¹ *Seal-Flex, Inc. v. Athletic Track & Court Constr.*, 172 F.3d 836, 842 (Fed. Cir. 1999). NCS accuses two products: the BreakThru V1 and BreakThru V2 (collectively the “BreakThru”). NCS asserts that

¹ NCS did not rely on the doctrine of equivalents to establish that any claim limitation was satisfied.

Nine directly infringes Claims 28-29 of the patent and indirectly infringes claims 36, 39, 50-52, and 55-57 of the '445 Patent (collectively, “the Asserted Claims”). Each claim requires that:

the region of the tubular member where the rupture disc is attached has a larger internal diameter than the internal diameter of the casing string and is parallel to the internal diameter of the casing string.

JX1, '445 Patent at Claim 28, Claim 50 (same). Claims 29, 36, 39, 51-52, and 55-57 depend from these two independent claims and therefore also require the same limitation. *Id.*

The Court construed this phrase to mean:

[p]lain and ordinary meaning where the plain and ordinary meaning is “in the region of the tubular member, the rupture disc is directly secured to and in sealing engagement with a cylindrical surface that is wider than and parallel to the inner surface of the casing string.”

Dkt. 56 at 2.² NCS presented legally insufficient evidence that the rupture disc is “directly secured to . . . a cylindrical surface that is wider than and parallel to the inner surface of the casing string.” *Id.* Therefore, Nine is entitled to judgment as a matter of law that the BreakThru does not infringe.

A. NCS presented no evidence that the BreakThru’s glass disc is “directly secured” to any surface.

NCS has presented no evidence that the BreakThru’s rupture disc “is directly secured to . . . a cylindrical surface.” Dkt 56 at 2. NCS’s expert, Dr. Rodgers, testified that the rupture disc does not directly touch *any* cylindrical surface of the BreakThru. He testified on cross examination that “the glass discs doesn’t touch the metal on the top, on the sides or on the bottom.” Trial Tr. 332:4-7. That is because intervening pieces of the device—O-rings and other plastic parts—prevent the glass disc from ever contacting the side of the piston ring or casing assembly. *See* Trial Tr. 299:12-23.

² Nine intends to appeal this construction and reserves all challenges for appeal.

Dr. Rodgers also testified that the glass disc is not “secured” to the cylindrical surface. Dr. Rodgers testified that “there’s a little bit of a gap in the up/down direction, along the axis of the tool.” Trial Tr. 332:13-14. That is, the glass disc itself is able to move vertically inside the assembled tool until pressure is applied. Because the BreakThru’s glass rupture disc does not touch any cylindrical surface and is able to move freely, no reasonable jury could find that the rupture disc is “directly secured” to any cylindrical surface and thus could not return a verdict that the BreakThru infringes any Asserted Claim.

B. NCS did not identify any “cylindrical surface” to which the BreakThru’s glass disc is directly secured.

NCS presented no evidence of any “cylindrical surface” to which the Breakthru’s glass disc is supposedly attached. Dr. Rodgers testified that the glass disc in the BreakThru V2 is located “inside [the] cylindrical surface” of the piston ring. Trial Tr. 249:12-19. And he testified that the “structure of the piston ring itself” holds the glass and the O-ring is just “filling the gap.” Trial Tr. 251:12-16. According to Dr. Rodgers, that means the glass disc is directly secured to the “cylindrical surface” of the piston ring. Trial Tr. 250:22-251:16.

But Dr. Rodgers also testified that there is a “gap in the up/down direction” when the tool is assembled, and pressure secures the glass disc “down on that shear ring.” Trial Tr. 332:10-16. In other words, Dr. Rodgers testified that the glass disc is able to move when it is assembled, but the combination of pressure from the top and the shear ring on the bottom keep the disc in place. Dr. Rodgers agrees that the shear ring has a “bevel,” Trial Tr. 246:18-22, meaning that it sits at an angle and is not parallel to the inner surface of the casing string. The only surfaces arguably securing the rupture disc is not a cylindrical surface parallel to the inner surface of the casing string. No reasonable jury could return a verdict that a bevel is a cylindrical surface. Because NCS’s own evidence shows that it is the combination of the bevel and the up-hole pressure that

secures the glass disc, the disc is not directly secured to any cylindrical surface that is parallel to the internal diameter of the casing string, and Nine is entitled to judgment as a matter of law that the BreakThru does not infringe any Asserted Claim of the '445 Patent.

II. NCS FAILED TO SHOW INDIRECT INFRINGEMENT. (DKT. 234 AT 4-6; DKT. 238 AT 8).

NCS has presented legally insufficient evidence of indirect infringement by inducement of claims 36, 39, 50-52, and 55-57. To prove induced infringement, NCS was required to prove that: “(1) acts that are actually carried out by Nine’s customers” using the BreakThru directly infringe; (2) Nine induced those infringing acts; and (3) Nine “knew the act, if taken, would constitute infringement.” Dkt. 246 at 11; *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 843 F.3d 1315, 1332 (Fed. Cir. 2016). NCS had to prove Nine’s specific intent to induce infringement. Dkt 246 at 11-12. NCS failed to present sufficient evidence of direct infringement by Nine’s customers of any Asserted Claim, or of Nine’s specific intent for its customers to infringe. Further, NCS failed to present sufficient evidence regarding necessary elements of claims 39, 51, and 52. As such, this Court should grant judgment as a matter of law that Nine did not induce infringement.

A. There is no evidence that Nine’s customers infringe.

First, because the accused products and methods do not infringe the '445 Patent, Nine’s customers do not infringe as a matter of law. *See supra* § I.

Moreover, NCS further failed to present legally sufficient evidence that Nine’s customers directly infringe the '445 Patent. While discussing Nine’s Run-In-Hole procedures, PX14, Dr. Rodgers presented his opinion “that Nine’s customers, *if* they follow the instructions, then they are directly infringing on Claims 36 and 39.” Trial Tr. 263:13-15 (emphasis added). Dr. Rodgers also opined that “*if* the customers follow those procedures, then they do infringe” claims 50-52. Trial Tr. 267:14-268:7-10 (emphasis added). He further opined that, “[*if*] Nine’s customers follow

those steps, then they directly infringe Claims 55, 56, and 57.” Trial Tr. 271:22-25 (emphasis added). This contingent analysis critically lacks any evidence that Nine’s customers *actually* followed those procedures. NCS did not identify a single customer of Nine that follows these procedures. Because NCS did not present any evidence of direct infringement by Nine’s customers—a necessary predicate to indirect infringement—Nine is entitled to judgment as a matter of law that Nine’s customers do not directly infringe any of the Asserted Claims.

B. There is no evidence of Nine’s intent to induce infringement.

NCS has presented no evidence of the specific intent required for inducement. To prove induced infringement, NCS had to prove, *inter alia*, that Nine had specific intent to encourage its customers to infringe the ’445 Patent. *DSU Med. Corp. v. JMS Co., Ltd.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006). It is not enough that the encouraged acts would infringe—NCS must present evidence that Nine knew the acts infringed and specifically intended its customers to infringe. *Id.*; *Roche Diagnostics Corp. v. Meso Scale Diagnostics, LLC*, 30 F.4th 1109, 1118 (Fed. Cir. 2022); Dkt 246 at 11-12.

There is no evidence of Nine’s knowledge of infringement or intent to infringe. Mr. Nipper testified that he reached out to Nine’s CEO before the patent issued, which is irrelevant to Nine’s knowledge after the patent issued. Trial Tr. 88:1-10. Further, PX201, the letter from NCS to Nine alleging infringement, is evidence of NCS’s state of mind, but not evidence of Nine’s state of mind. *See* Trial Tr. 88:24-89:10. NCS presented no other evidence of what Nine knew about the claims or that it believed its customers’ actions infringed but encouraged them anyway. Because there is no evidence of Nine’s knowledge of infringement or intent to infringe, the Court should enter judgment as a matter of law that Nine did not induce infringement.

Further, during Nine’s case in chief, Nine presented evidence that it relied on a reasonable reading of the Asserted Claims and believed that the BreakThru did not practice the limitations of

the patent. Specific intent to infringe is not established “if the defendant reads the patent’s claims differently from the plaintiff, and that reading is reasonable.” *Commil USA, LLC v. Cisco Sys., Inc.*, 575 U.S. 632, 642 (2015). Clair Holley testified that Nine does not “have any intent that its customers infringe the ’445 Patent.” Trial Tr. 440:7-11. Here, the evidence shows two ways in which Nine had a reasonable reading of the claims.

First, in Nine’s infringement defense at trial, Nine reasonably relied on its understanding of the claims that the BreakThru does not infringe because the rupture disc is not “directly secured to and in sealing engagement with a cylindrical surface that is wider than and parallel to the inner surface of the casing string.” *See supra* §I. NCS presented no evidence that Nine was aware that its product infringed under that construction and specifically intended to encourage infringement. And Nine’s reading of the claims is reasonable—it is reasonable to believe that an O-ring does not “directly secure” and even NCS’s own expert opined that there is a “gap in the up/down direction” when the tool is assembled, and pressure secures the glass disc “down on that shear ring.” Trial Tr. 332:10-16. While the jury ultimately sided with NCS, it could (and should) have reasonably sided with Nine, and therefore NCS has presented legally insufficient evidence of specific intent. *Roche Diagnostics*, 30 F.4th at 1118 (holding no induced infringement when defendant relied upon a “reasonable interpretation of the contract provisions”).

Second, Nine relied on a reading of the claims that was rejected by this Court but was not unreasonable. PX262, a letter from Nine’s counsel to NCS’s counsel from January 28, 2020, just months after the patent issued, presents Nine’s consistent reading of the claims and its belief that it does not infringe the claims because the BreakThru rupture disc “rests on a 45 degree shoulder on the shear-out plug.” PX262 at 3. That reading is also consistent with what NCS told the patent examiner: that the Gano reference does not anticipate the claims because the rupture disc in that

reference is attached to a sloped surface. Trial Tr. 630:9-19; JX2 at 40. Even though this Court construed the claims differently, Nine's reliance on its reasonable reading of the claims (the reading NCS presented to the patent examiner) shows Nine lacked specific intent to infringe as a matter of law. *Roche Diagnostics*, 30 F.4th at 1118. Because Nine relied on a reasonable reading of the claims and believed that its product did not infringe, and NCS failed to present any evidence on specific intent, no reasonable jury could conclude that Nine had the specific intent to induce infringement. The Court should therefore enter judgment as a matter of law.

C. There is no evidence of infringement of Claims 39, 51, and 52 because NCS made no comparisons of specific gravities.

There is no legally sufficient evidence regarding infringement of Claims 39, 51, and 52 because NCS did not present any evidence of comparative specific gravity, as required by those claims.

Claim	Language
39	The float tool recited in claim 36 wherein the sealed chamber is filled with a fluid having a lower specific gravity than that of the well fluid.
51	The method recited in claim 50 further comprising: filling the casing string above the rupture disc assembly with a second fluid having a specific gravity higher than the first specific gravity.
52	The method recited in claim 51 wherein the first specific gravity is less than the specific gravity of the well fluid.

Central to all of these claims is a comparison between the specific gravity of the fluid in the sealed chamber to the specific gravity of a fluid outside that chamber. Dr. Rodgers testified generally regarding the density of fluids, but offered no comparisons of the specific gravities of the fluids inside and outside the sealed chamber. *See* Trial Tr. 262:6-15 ("You're going to put a low density fluid in there, like air, a gas."). Dr. Rodgers acknowledged that specific gravity and density are different calculations. Trial Tr. 317:22-318:5. Nine's expert, Dr. Meehan, explained

that specific gravities of gases and liquids cannot be compared because they are based on different reference materials and relative volumes. Trial Tr. 597:17-22.

But NCS only presented evidence that air is in the chamber and liquid drilling mud or water is outside the chamber. Trial Tr. 16:17-21; 252:10-253:4 (“It’s got the air chamber”); 257:20-258:1 (“an air chamber in the casing”); 259:10-15 (“So below the disc is air and above it is the water or drilling mud.”); 262:6-15 (Claim 39, “You’re going to put a low density fluid in there, like air, a gas.”); 266:11-15 (“the sealed chamber, which is the air chamber”); 267:5-13. Thus, there is no evidence of the relative specific gravities used in the accused products—or that the BreakThru can be used with two liquids with different specific gravities. Accordingly, there is no legally sufficient evidence to find that the BreakThru infringe Claims 39, 51, and 52, and the Court should grant judgment as a matter of law that Nine did not induce infringement of those claims.

III. THE TCO TDP-PO PLUG ANTICIPATES CLAIMS 28 AND 29 (DKT. 239 AT 1-2).

A. The TCO TDP-PO Plug is prior art to the ’445 Patent. (Dkt. 238 at 2-5).

Nine established as a matter of law that the TCO TDP-PO Plug is prior art to the ’445 Patent, as the TCO TDP-PO device was on sale more than one year before the application date. 35 U.S.C. § 102(a). A device is “on sale” when it is “the subject of a commercial offer for sale” and “ready for patenting.” *Helsinn Healthcare S.A. v. Teva Pharm. USA, Inc.*, 139 S. Ct. 628, 630 (2019); Dkt. 246 at 15-16. Mr. Brandsdal, the lead designer of the TDP-PO, testified that TCO offered the TDP-PO Plug for sale in 2011 to Aramco, Shell, SATCo, and Maersk. Trial Tr. 473:13-474:9. TCO sold the first two TDP-PO plugs to Eversolve in 2011. Trial Tr. 475:5-14. That sale was corroborated by DX11 (new product approval form), DX12 (invoice for Eversolve sale), DX13 (packing list for sale to Eversolve), DX8 (TDP PoP 572x375 drawing number 1018-12-001), and DX10 (new product approval TDP-PoP, drawing 1018-12-001 dated Dec. 8, 2011). The TCO website included the TDP-PO Plug as of July 2011. DX9. NCS presented no rebuttal or

impeachment evidence suggesting the TDP-PO Plug was not on sale in 2011. This Court “should give credence” to the “uncontradicted and unimpeached” evidence of the 2011 sale. *Evans*, 484 F.3d at 334. Because the TDP-PO Plug was on sale in July 2011, it is prior art to the ’445 Patent.

In addition, Nine also established as a matter of law that the TCO TDP-PO Plug was on sale in August 2012. Trial Tr. 493:1-24. Mr. Brandsdal testified that TCO sold the TDP-PO Plug to Apache in August 2012 through TCO’s normal sales team. Trial Tr. 498:21-499:11. Nine corroborated that testimony with reliable documents. DX14 (August 5, 2012 purchase order for Apache); DX15 (certificate of conformity for Apache sale); DX17 (Apache End of Well Report Jan 19, 2013). These documents reflect both that the customer ordered the TCO TDP-PO Plug in August 2012 and did in fact use it, and NCS presented no conflicting or impeaching evidence to show that the sale did not occur. Moreover, the evidence is uncontradicted that the tool sold in 2012 is the same tool sold in 2011. Trial Tr. 485:8-11. Dr. Rodgers also admitted that there is only one TDP-PO tool. Trial Tr. 861:2-10. Nine is thus entitled to judgment as a matter of law that both TCO TDP-PO Plugs sold in 2011 to Eversolve and in 2012 to Apache are prior art.

B. No reasonable jury could find that NCS “publicly disclosed” the same “subject matter” prior to the date the TCO TDP-PO Plug was on sale.

NCS argued that it publicly disclosed the same subject matter as the TDP-PO, but no reasonable jury could conclude that the TCO TDP-PO is not prior art based on those disclosures. First, NCS argues that it disclosed the Airlock device in July 2012, Trial Tr. 59:5-16, which cannot not apply to the 2011 sale of the TCO TDP-PO to Eversolve. Further, Nine NCS presented no evidence that it “publicly disclosed” the same “subject matter” as the prior art TDP-PO Plug prior to the 2012 sale of the TDP-PO Plug.

Section 102(b)(1)(B) of Title 35, enacted with the America Invents Act, states:

(b) Exceptions.—

(1) Disclosures made 1 year or less before the effective filing date of the claimed invention.—A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if—

...

(B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

35 U.S.C. § 102(b)(1)(B). This statute thus provides an exception to the prior art identified in Section 102(a)(1). The Court instructed the jury that “[s]ubject matter is publicly disclosed if it is disclosed to a member of the public interested in the art who is not under any limitation, restriction, or obligation to maintain the disclosure’s secrecy.” Dkt. 246 at 16.

However, NCS failed to present any evidence that this exception applied. Mr. Nipper testified that NCS shipped the Airlock device “sealed” and customers “can’t see inside.” Trial Tr. 92:19-23. NCS’s other evidence—engineering schematics from July 2012—are all marked confidential. PX41; PX42; PX128; PX133; Trial Tr. 158:16-18; 159:3-21; 160:14-17. Rather than “publicly disclos[ing]” the Airlock designs, NCS showed that it went to lengths to keep the contents and mechanism of the Airlock private and there is no evidence it was disclosed to any interested member of the public who is not under any limitation, restriction, or obligation to maintain the disclosure’s secrecy. The evidence establishes as a matter of law that NCS did not publicly disclose *any* subject matter concerning the design of the Airlock device in July 2012.

Second, the statute only excludes as prior art a disclosure if the “subject matter” of that disclosure is *the same* as the prior inventor public disclosure. Dkt. 246 at 16. As explained by the USPTO, “[t]he exceptions of 35 U.S.C. 102(b)(1)(B) or 102(b)(2)(B) are only applicable when the subject matter of the intervening disclosure is *the same* as the subject matter of the earlier inventor-originated prior public disclosure.” MPEP § 717.01(b)(2)(I) (emphasis added). Thus, even if the Section 102(b)(1)(B) exclusion applies, it extends only to the “subject matter” previously disclosed

by the inventor, and not to the entire reference. NCS failed to present evidence that the design of its Airlock device, even if publicly disclosed—which it was not—was the same “subject matter” as the prior art TDP-PO disclosure.

C. The TCO TDP-PO Plug Anticipates Claims 28 and 29.

Nine is entitled to judgment as a matter of law that claims 28 and 29 of the ’445 Patent are anticipated by the TCO TDP-PO Plug. A prior art reference anticipates a patent’s claim under 35 U.S.C. § 102(a) if the prior art “discloses each and every element of the claimed invention arranged or combined in the same way as the claim.” *Monsanto Tech. LLC v. E.I. DuPont de Nemours & Co.*, 878 F.3d 1336, 1342-43 (Fed. Cir. 2018); Dkt 246 at 19-20. Based on the evidence presented at trial, Nine has established by clear and convincing evidence that Claims 28 and 29 are anticipated as a matter of law.

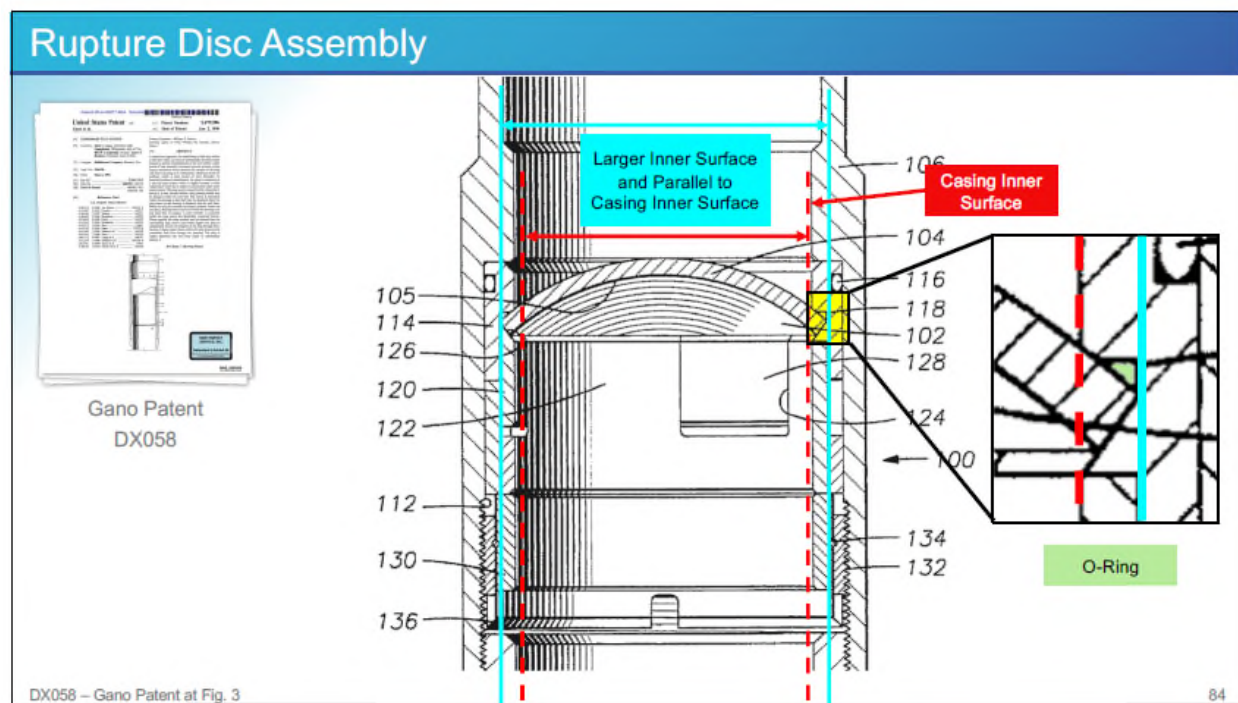
The TCO TDP-PO Plug discloses each of the limitations of Claims 28 and 29. DX7, DX8. Dr. Meehan testified the TCO TDP-PO Plug includes each limitation of claims 28 and 29. Trial Tr. 612-15, 618-19, 621-23, 626-29, 633-37. NCS’s only argument for why the TDP-PO Plug does not disclose the claimed invention is that NCS alleges the tool is not configured for connection with casing string. *E.g.*, Trial Tr. 772:15-22; 780:3-11 (“A. . . . we’re not applying hydraulic pressure to a *casing string* to actuate these tools – or activate, we’re applying pressure to *the tubing*” (emphasis added)). Instead, Dr. Rodgers testified that the designs of the tool make it too small to be for casing because casing is customarily greater than or equal to 4.5 inches internal diameter. Trial Tr. 773:13-775:5, 777:5-15. But nothing in this Court’s construction of casing string requires a minimum size for the tool to be configured for casing. *See* Dkt. 226. And Dr. Rodgers admits that he is aware of wells cased with pipe smaller than 4.5 inches. Trial Tr. 843:5-10.

In particular, Dr. Meehan understood and explained that the TCO TDP-PO Plug is configured for use with a casing string, and Dr. Meehan has personal experience using casing smaller than 4.5 inches—compatible with the prior art TDP-PO Plugs. Trial Tr. 610:11-612:17. 614:13-24. And the inventor, Mr. Brandsdal testified that it could be used in both tubing or casing—it can be used “for any type of operations” including “casing operations.” Trial Tr. 462:15:20. Dr. Rodgers was wrong that the prior art TCO TDP-PO Plug was not a casing tool, and as such, his only argument against anticipation by the TDP-PO fails. No reasonable jury could conclude that the TCO TDP-PO Plug does not anticipate claims 28 and 29, and Nine is entitled to judgment as a matter of law.

IV. THE GANO REFERENCE ANTICIPATES CLAIMS 28 AND 29. (DKT. 238 AT 5-6).

Nine is entitled to judgment as a matter of law that claims 28 and 29 are also anticipated by the Gano reference. Dkt.246 at 19. It is undisputed that U.S. Patent Number 5,479,986 (“Gano”) is prior art to the ’445 Patent. Dr. Meehan testified that the Gano reference discloses each and every element of the claimed invention. Trial Tr. 616-640. The Patent Office also considered Gano as prior art and initially rejected the claims that became Claims 28 and 29 as being unpatentable over Gano. Trial Tr. 576:17-577:8. In response to a rejection of the claims, NCS amended the independent claims in an attempt to avoid Gano by adding the phrase “and is parallel to the internal diameter of the casing string.” Trial Tr. 577:9-18. NCS told the Patent Office that the claim is valid because the Gano patent teaches a rupture disc in sealing engagement with and attached to a region of a tubular member “that is not parallel to the internal diameter of the casing string but is instead sloped.” PX2 at 40; Trial Tr. 630:11-16. But as the evidence presented at trial irrefutably showed, Gano discloses a rupture disc that is in sealing engagement with and attached to a region of the tubular member *that is parallel to the internal diameter of the casing string*.

First, Dr. Meehan explained that the patent itself includes a plug assembly that can be used in well casing. Trial Tr. 615:10-616:25 (Claim 28.1).³ And Gano discloses a rupture disc in sealing engagement with a tubular member with upper and lower ends because of an O-ring. Trial Tr. 619:1-25 (Claim 28.2). Gano discloses a rupture disc that moves downhole before it ruptures. Trial Tr. 623:7-625:7 (Claim 28.3 and animation). Gano also discloses a rupture disc that is in sealing engagement with a cylindrical surface that is wider than and parallel to the inner surface of the casing string. Trial Tr. 625:8-25 (Claim 28.4); Trial Tr. 629:4-630:1. Dr. Meehan explained that Gano discloses a rupture disc that is attached to a “region of the tubular member . . . [that] is parallel to the internal diameter of the casing string.” Trial Tr. 630:22-631:22. But Dr. Meehan then presented Figure 3 of the Gano patent, in which there is a cylindrical surface to which the rupture disc is “secured through an O-ring.” Trial Tr. 631:5-11.



³ Dr. Meehan’s claim taxonomy can be found in his Expert Report. *See* Dkt 106-1, Ex.1 at 125-28 (Appendix A).

Dr. Rodgers agreed that the O-ring in Gano is “between a rupture disc and a vertical, parallel, cylindrical surface.” Trial Tr. 847:4-9; DX9 at 6. Dr. Rodgers agreed that his opinion is that “an O-ring can be directly secured if it’s between a rupture disc and a cylindrical surface.” Trial Tr. 845:24-846:4.

Yet Dr. Rodgers argued that somehow the O-ring in the Gano patent was different from the O-rings in the ’445 patent. Trial Tr 845:2-14. Dr. Rodgers, argued that the O-ring in Gano was a “crush seal” and therefore a different mechanism. Trial Tr. 791:21-793:9. Dr. Rodgers also focused on the need for the rupture disc to maintain sealing engagement as it moves downhole. Trial Tr. 792:18-793:1. But there is no requirement in the ’445 Patent that the seal be maintained during the downhole movement—the question is whether the rupture disc is in “sealing engagement” before it moves downhole. JX1, Claim 28. In fact, Claim 28 requires that the rupture disc be configured “to disengage from sealing engagement when exposed to a pressure.” Claim 28. This Court construed “disengage from sealing engagement” to mean “before rupturing, move the rupture disc downhole relative to the region.” Dkt. 246 at 8 (Jury Instructions). Dr. Rodgers admits that Gano “starts to move” before it ruptures. Trial Tr. 792:18-793:4.

Nor does Dr. Rodgers’ crush-seal argument provide legally sufficient evidence for the jury to find that Gano does not disclose the limitations of claim 28. Indeed, Gano does not refer to a crush seal; it refers to an O-ring, the same as the ’445 Patent. DX58 at 12, Column 8. Dr. Rodgers argued this is a “different type of way to seal a rupture disc,” but that is still sealing the rupture disc. Trial Tr. 792:5-9. No reasonable jury could return a verdict that the Gano reference does not anticipate Claim 28, and Nine is entitled to judgment as a matter of law.

Similarly, Dr. Meehan explained, and NCS did not dispute, that Gano includes the additional limitations in Claim 29. Trial Tr. 632:8-633:19 (Claim 29.1); 633:20-634:10 (Claim 29.2). Accordingly, Nine is entitled to judgment as a matter of law that Gano anticipates Claim 29.

V. ALL ASSERTED CLAIMS ARE OBVIOUS IN LIGHT OF PRIOR ART. (DKT. 238 AT 6-7).

Nine is entitled to judgment as a matter of law that Claims 28-29, 36, 39, 50-52, and 55-57 are obvious in light of prior art. The sole issue in this case was whether “a person having ordinary skill in the field of the invention” would have had motive to “combine the known elements in the prior art in a way the claimed invention does.” Dkt. 246 at 23. A claim is obvious if “some motivation or suggestion to combine the prior art teachings” can be found in the prior art, the nature of the problem, or the knowledge of a person having ordinary skill in the art. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007); *see* Dkt. 246 at 21-24 (Instruction on Obviousness). “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *KSR*, 550 U.S. at 419-20. Obviousness “is a question of law based on underlying findings of fact.” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1372 (Fed. Cir. 2019) (citations omitted). No reasonable jury could conclude that the Asserted Claims were not obvious, and the Court should grant judgment as a matter of law that the Asserted Claims of the ’445 Patent are invalid as obvious.

Plaintiffs do not dispute there are at least three prior art references:

- U.S. Patent Number 5,479,986, “Gano” (DX58)
- U.S. Patent Number 5,829,526, “Rogers Patent” (DX62)
- Article entitled “Buoyancy Assist Extends Casing Reach in Horizontal Wells” by H.E. Rogers, D.L. Bolado, and B.L. Sullaway, “Rogers Publication”.

In addition, there is a fourth reference, the TCO TDP-PO Plug. NCS contested whether the TCO TDP-PO is prior art, but as explained above in Section III.A, the TCO TDP-PO was on sale in 2011 and is prior art as a matter of law.

Nine presented four combinations to show that the Asserted Claims are obvious: (1) Gano and the Rogers Patent, (2) TCO TDP-PO and the Rogers Patent; (3) Gano and the Rogers Publication, and (4) TCO TDP-PO and the Rogers Publication. Nine is entitled to judgment as a matter of law on each combination that the '445 Patent is invalid by clear and convincing evidence. Dr. Meehan testified that Gano in view of the Rogers Patent renders obvious the Asserted Claims. Trial Tr. 652:21:24. Dr. Meehan also testified that Gano in view of the Rogers Publication renders obvious the Asserted Claims. Trial Tr. 652:14-20. Dr. Meehan further testified that the TDP-PO Plug in view of the Rogers Patent renders obvious the Asserted Claims. Trial Tr. 655:4-7. And Dr. Meehan also testified that the TDP-PO Plug in view of the Rogers Publication renders obvious the Asserted Claims. Trial Tr. 654:25-655:3.

Notably, Dr. Rodgers did not dispute that the Rogers Patent and Rogers Publication disclosed the claim limitations identified by Dr. Meehan. Instead, Dr. Rodgers' entire rebuttal focused on (1) whether the TDP-PO and Gano disclosed the claim limitations identified by Dr. Meehan, and (2) whether there was a motivation to combine the references. No reasonable jury could have found that the references in combination did not render the asserted claims obvious.

A. The TDP-PO Plug in view of the Rogers references.

With the TDP-PO Plug as prior art, no reasonable jury could conclude that the claims of the patent are not obvious. NCS's only argument for why TDP-PO Plug does not disclose the claimed invention is that the tool is not configured for connection with casing string. Trial Tr. 772:15-22; 780:3-11 ("A. . . . we're not applying hydraulic pressure to a *casing string* to actuate these tools – or activate, we're applying pressure to *the tubing*") (emphasis added). As explained

above, that argument does not comport with the Court's construction, nor the evidence. *See* § III.C. Furthermore, for purposes of obviousness, it is irrelevant. The question is whether one skilled in the art would be motivated to combine the TDP-PO tool with one of the casing flotation references (Rogers Patent and Rogers Publication). No reasonable jury could conclude that there was no motivation to combine the TDP-PO Plug for use in casing flotation.

The key to NCS's argument was Dr. Rodgers' opinion that there was no motivation to combine the TDP-PO with the Rogers Patent or the Rogers Publication because, as he argued, the TDP-PO was used with tubing, not casing. According to Dr. Rodgers, a person would not be motivated to use a tubing tool as a casing tool because "it's not something that you can easily do." Trial Tr. 785:8-17. But that is not the standard—even if Dr. Rodgers was correct that the TDP-PO was a tubing tool rather than a casing tool (which he was not), the jury was instructed that motivation to combine comes from the "desirability of combining elements in the claimed invention." Dkt 246 at 23 (Post-Evidence Instructions). And there is no dispute that there was a motivation to combine. The Rogers Publication describes flotation of casing as well as a motivation to combine the TDP-PO: "the need to have full opening casing [internal diameter], should be able to hold pressures from both above and below, should be drillable with PDC bits." Trial Tr. 604:3-8. Dr. Meehan further opined that it would be "even better if you don't have to drill it at all." Trial Tr. 604:1-8. Dr. Meehan also explained that a person of skill in the art would be motivated to combine the two because the TDP-PO Plug provides "higher pressure limitations, better control on how the device actuates, [and] the fact that the plug is destroyed into tiny pieces." Trial. Tr. 651:21-652:5. And the patent examiner had already determined that it would have been obvious to one skilled in the art to substitute the BACE of Rogers with the temporary plug of Gano—it would also be obvious to substitute the temporary plug of the TDP-PO as well.

Dr. Rodgers even acknowledged that there was motivation to combine the TCO TDP-PO tool with the casing flotation references. When asked on cross examination, he said “I believe there was a desire to sell this tool to—for use on a liner.” Trial Tr. 853:8-10. A liner is another word for casing. Trial Tr. 854:2-5. In other words, Dr. Rodgers believed that there was evidence of a motivation to use the TCO TDP-PO for casing. And that is all that obviousness requires—a motivation to combine the references to achieve a predictable result. *KSR*, 550 U.S. at 419–20. Thus, no reasonable jury could have concluded that there was not a motivation to combine the TDP-PO and the Rogers references (the only disputed issue), and Nine is entitled to judgment as a matter of law that the Asserted Claims are invalid as obvious.

B. Gano in View of the Rogers References.

The only factual dispute for this invalidity challenge is whether the Gano patent includes a region of the tubular member that is “parallel to the internal diameter of the casing string.” Dr. Meehan explained that the patent examiner had rejected the language that became claim 28 because it would be obvious to combine the BACE of Rogers with Gano. Trial Tr. 576:17-577:18. The only addition to that language was 11 words: “and is parallel to the internal diameter of the casing string.” Trial Tr. 577:9-18. Thus, the only issue for the jury was whether the Gano reference or the Rogers references disclosed a rupture disc that is in sealing engagement with a region that “is parallel to the internal diameter of the casing string.” As explained above, *see* § IV, no reasonable jury could conclude that the Gano reference does not contain that limitation. Accordingly, no reasonable jury could return a verdict that Gano does not (in combination with either the Rogers Patent or Publication) render the ’445 Patent invalid.

In addition, Dr. Meehan explained that a person of ordinary skill in the art would be motivated to combine Gano with either the Rogers Patent or Rogers Publication. Trial Tr: 649:14-18. Of course, the patent examiner for the ’445 Patent came to the same conclusion. Trial Tr:

652:15-22. And Dr. Meehan agreed with Dr. Rodgers that a person of skill would be motivated to use the tool in Gano because it did not require pumping another piece down to remove the BACE tool. Trial Tr 650:17-651:8. Dr. Rodgers argued that there would be no motivation to combine because the tool is not reliable enough. Trial Tr 796:12-798:6. There is, of course, no corroborating evidence either way of the reliability of the device, and the jury was instructed that motivation to combine needed only a “reasonable expectation of success.” Dkt. 246 at 23-24. No reasonable jury could have found that the asserted claims were not obvious based on Gano and either of the Rogers references.

C. NCS presented no legally sufficient evidence of secondary considerations to overcome the prima facie showing of obviousness.

Following Nine’s showing by clear and convincing evidence that the Asserted Claims were obvious, the only remaining rebuttal evidence was Dr. Rodgers’ baseless opinions about secondary considerations, including a long-felt need in the industry and evidence of commercial success. Those opinions were the subject Nine’s *Daubert* motion to exclude Dr. Rodgers’ testimony. Dkt. 115 at 5-6. And indeed, Dr. Rodgers contradicted his own testimony on secondary considerations by arguing that Halliburton’s continued use of the BACE tool meant there was no need for a better solution. Trial Tr. 786:17-25.

More centrally, Dr. Rodgers’ evidence lacked an appropriate nexus to the ’445 Patent because NCS’s marketed product (the Airlock) is not coextensive with the ’445 Patent. *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (“[S]econdary considerations may presumptively be attributed to the patented invention only where ‘the marketed product embodies the claimed features, and is coextensive with them.’”); *W. Union Co. v. MoneyGram Payment Sys., Inc.*, 626 F.3d 1361, 1372 (Fed. Cir. 2010). Dr. Rodgers explained that the Airlock practices the ’445 Patent with an “innovative design of that disengaging disc in

the cylindrical bore that disengages, accelerates, smashes to pieces and doesn't require you to push those extra tools." Trial Tr. 801:3-8. But Gano and the TCO TDP-PO also disclosed a rupture disc that disengages from a cylindrical bore, accelerates, and smashes into pieces. Trial Tr. 621:23-623:17 (TDP-PO); 623:18-625:7 (Gano). Dr. Rodgers provided no opinion on how the allegedly new feature of the '445 Patent—the eleven words “and is parallel to the internal diameter of the casing string”—changed the market or contributed to the commercial success of Airlock. JX1 (claim 28). There is no legally sufficient evidence connecting Dr. Rodgers' alleged secondary considerations to the '445 Patent.

Nor is there any evidence of commercial success through license agreements obtained through litigation. The Federal Circuit has rejected licenses obtained through litigation as evidence of secondary success. *Soverain Software LLC v. Newegg Inc.*, 705 F.3d 1333, 1346 (Fed. Cir. 2013), *amended on reh'g*, 728 F.3d 1332 (Fed. Cir. 2013) (licenses obtained through litigation settlements were not evidence of commercial success). And the few licenses that were not the result of litigation are not reliable evidence because they resulted in only a dozen sales. For example, Advanced Oil Tools had zero sales in Q2 of 2021. DX169. Forum U.S. sold just eight units. Trial Tr. 388:23-389:13; DX212. Because there is no legally sufficient evidence to overcome the prima facie showing of obviousness, Nine is entitled to judgment as a matter of law that claims 28, 29, 36, 39, 50-52, and 55-57 of the '445 Patent are obvious.

CONCLUSION

For the foregoing reasons, the Court should grant Nine's renewed motions for judgment as a matter of law under Federal Rule of Civil Procedure 50(b).

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on the 1st day of July 2022, a true and correct copy of the foregoing document was served on all counsel of record via the Court's CM/ECF system.

/s/ Hilary L. Preston

Hilary L. Preston